

Examining the efficacy of GDF11 antibody as a rejuvenator of aged human muscle stem cell capacity and muscle repair .

Grant Award Details

Examining the efficacy of GDF11 antibody as a rejuvenator of aged human muscle stem cell capacity and muscle repair .

Grant Type: Inception - Discovery Stage Research Projects

Grant Number: DISC1-08652

Project Objective: To determine whether a targeted antibody strategy that inhibits the activity of blood-borne GDF11 in aged humans is effective to enhance human muscle cell function and rejuvenate muscle repair.

Investigator:

Name:	Andrew Brack
Institution:	University of California, San Francisco
Type:	PI

Disease Focus: Aging, Skeletal/Smooth Muscle disorders

Human Stem Cell Use: Adult Stem Cell

Award Value: \$180,000

Status: Closed

Progress Reports

Reporting Period: Year 1

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Grant Application Details

Application Title: Examining the efficacy of GDF11 antibody as a rejuvenator of aged human muscle stem cell capacity and muscle repair .

Public Abstract:**Research Objective**

To examine the efficacy of blocking blood borne GDF11 activity to rejuvenate aged human muscle stem cell regenerative capacity.

Impact

This project will provide a proof-of-principle that GDF11 inhibition can boost aged human skeletal muscle repair, and facilitate its translational potential.

Major Proposed Activities

- Determine GDF11 protein levels in human sera as a function of age.
- Determine the efficacy of GDF11 antibody treatment to reverse the effects of aging serum on human muscle stem cell function under transplantation setting.
- Determine the efficacy of GDF11 antibody treatment to reverse the effects of aging serum on human muscle stem cell function examined in vitro.

Statement of Benefit to California:

The percentage of elderly adults is at a historical high, and continues to climb. The need to develop therapeutic strategies to treat pathophysiological conditions in the elderly is medically and economically relevant. I propose to develop novel approaches for the augmentation of human muscle stem cell function to rejuvenate muscular regeneration and aging. These advances could positively impact the aging population of California, reducing morbidity, mortality, and health care costs.

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